

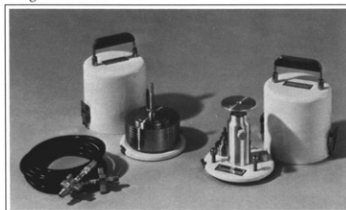
Deadweight Gauges & Testers FEATHERWEIGHT SERIES



- Portable — very lightweight
- Accurate— 0.1% of indicated reading, traceable to the National Institute of Standards & Technology (NIST). Optional 0.05% or 0.02% Indicated Reading. See page P 19.
- Reliable — long life piston and corrosion resistant materials
- Metric (SI) or US customary Units calibration
- Certificate of Calibration, optionally available
- Gas or liquid pressure measurement
- Stock delivery, repair service and spare parts available

Featherweight Gauges and Testers are used for accurate checking of gas or liquid pressures in pipelines or in industrial plants. They are adaptable for either liquid or gas pressure in refineries, petrochemical plants, power plants, or in any industrial laboratory or research application where accurate pressure measurement is required.

Featherweight
Gauges Series 59



HIGH SENSITIVITY

All Featherweights have excellent sensitivity. The low pressure models have higher sensitivity at the lower end of their range and are recommended for low pressure applications. All are useful for a wide variety of low pressure applications and are especially recommended for checking orifice-meter static pressures in gas distribution systems.

HIGH ACCURACY

These Featherweight Gauges are extremely accurate because they do not depend on springs or pressure transducers, but directly on the balancing of known weights against the force exerted by an unknown pressure, acting on a piston of precisely known area. The weights are applied manually, as with a double-pan balance, until the piston is floating with no net vertical movement. Each piston's area is determined by comparison against a piston of known area traceable to the National Institute of Standards & Technology. The mass of the balancing weights is also traceable to NIST.

LIGHTWEIGHT

The gauge and weights have separate, sturdy metal cases for portability. They are compact and are constructed from a lightweight alloy for ease of carrying in the field.

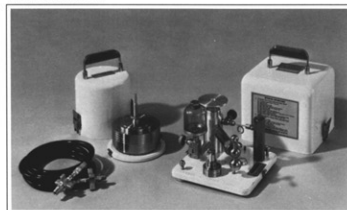
FEATHERWEIGHT GAUGES

Gauges are used to measure the pressure exerted by a gas or liquid and cannot generate a test pressure.

FEATHERWEIGHT TESTERS

In addition to determining unknown pressures, testers have a manually operated pump to generate the pressure needed to calibrate spring gauges or strain gauge instruments.

Featherweight
Testers Series 61



PRINCIPLE OF OPERATION

The unknown liquid or gas pressure is measured by connecting the gauge to the unknown and then balancing the force that the unknown exerts against a piston with a known area. Weights are applied manually as the vertical movement of the piston is observed while rotating. When no net vertical piston motion is seen, the pressure is determined by counting the calibrated weights used and adding the fixed weight.

Before the instrument is used, the base must be level. A spirit level is permanently mounted on the base plate for this purpose. The optional tripod provides a convenient support, whether it is used in a building or outdoors. Operators quickly learn to make repeatable, accurate measurements.

SPECIFICATIONS

Shipping Weight	less than 20 kg (45 lb)	Oil Flash Point	450°F
Size	510 x 250 x 300 mm (20" x 10" x 12")	Input Connector	1/4" NPT
Maximum Pressure	Up to 16100 kPa (or 2000 psi)	Seal Materials	Buna-N
Minimum Pressure:	50 kPa (3 psi) for the large piston area gauges. 100 kPa (10 psi) for the small piston area gauges	Connecting Hose	Part 36-50 flexible hose with hand wheel connector included
Accuracy	0.1% of indicated pressure	Carrying Case	Metal cases with handles are included for the gauge and the weights
Certificate of Calibration	Available upon request, accuracy 0.05%. Special 0.02% Certificate available upon request. See page P 19.	ALL DATA AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE	
Calibration Temperature	25° C (77°F) Calibration based on standard gravity of 980.665 cm/s ²	OPTIONS AND ACCESSORIES	
Calibration Meets	MIL-C-45662A	• Cat. No. 36-50 flexible hose with handwheel connectors furnished as standard with each instrument. Additional hoses can be ordered using this catalog number.	
Temperature Limit	4 to 50° C (40 to 120°F)	• Cat. No. P-535 tripod available for convenient support.	
Humidity	0 to 95% RH	• Cat. No. P-1169 synthetic hydraulic fluid for use when measuring water, steam, or oxygen pressure. The instrument must be ordered new for this service. DO NOT CHANGE FLUID WITHOUT THOROUGHLY CLEANING THE INSTRUMENT. Instruments can be furnished cleaned for oxygen use and filled with P-1169 synthetic fluid when specified. See Ordering Information.	
Vibration	Small amplitude, high frequency only	• Cat. No. 23-70 mineral oil, 1 pint.	
Environment	Minimize dust and corrosive atmosphere	• Certificate of Calibration traceable to NIST. Certificate for 0.02% accuracy Certificate for 0.05% accuracy See Page P19	
Piston Material	Hardened stainless steel	To order, see pages P19 & P23	
Pressure Tubing Material	Stainless steel		
Weight Materials	Brass or stainless steel		
Smallest Weight Supplied	See Ordering Information		
Fill Fluid	Mineral oil standard (P-1169 synthetic fluid optional for special requirements)		